

ED. PROJ. NO.	STATE	FEDERAL PROJECT NO. & SEC.	SHEET NO.
5	MO.	PWA 76	
9	REYNOLDS	B	

TITLE SHEET

SEE

REYNOLDS RTE. B

SEC 4A

S-851

FINAL	DATE
SURVEY	BY
NOTE BOOK	PLANT
NO.	AREA CHECKED

ORIGINAL	DATE
SURVEY	BY
NOTE BOOK	PLANT
NO.	AREA CHECKED

453

MISSOURI STATE HIGHWAY DEPARTMENT

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.	PWA 76, 3B-54A	19	NO.	NO.

Docket # 2396

BILL OF REINFORCING STEEL FOR SUPERSTRUCTURE					
No.	Size	Length	Mark	Location	Bending Sketch and Cutting Diagram
16	3/4"	18'-9"	C1	Curb	
20.4	3/4"	2'-0"	C2	"	
16	3/4"	25'-6"	C3	"	
8	3/4"	22'-6"	C	"	
508	3/4"	2'-0"	S1	Slab	
52	3/4"	18'-6"	S2	"	
35	3/4"	23'-0"	S3	"	
16	3/4"	21'-9"	S4	"	
52	3/4"	25'-3"	S5	"	
20	3/4"	22'-6"	S6	"	
16	3/4"	17'-6"	C5	Curb	
52	3/4"	17'-3"	S7	Slab	

Note: Dimensions given are along centerline of bars and are for computed lengths.

GENERAL NOTES:

Exposed edges to be beveled 3" where no other bevel is noted. Concrete in slabs and curbs to be Class X. All other concrete to be Class B. For welding symbols see Publication of American Welding Society, Nov. 1929. All piles shall be driven with a steam hammer developing not less than 7000 ft. lbs. at each full stroke of the piston to a bearing of 20 ton. In case required bearing is obtained at a lesser depth tips of piles shall be driven to Elev. 728 or to a practical refusal into solid rock or boulders as described in Special Provisions. All concrete to be proportioned by the weight proportioning method. See Special Provisions. Bridge excavation in accordance with Section I of Standard Specifications issued April 1, 1930. I-Beams with fastenings, spacers, handrail, handrail posts with fastenings to be paid for as structural steel. Cost of metallic edge moulding will be included in price bid for concrete. Detail shop drawings shall be submitted to the State Highway Department in duplicate and shall be approved before steel is fabricated. Where rubber compound is specified on plans for use in partition and expansion joints, the pre-moulded joint shall be securely stitched to one face of concrete with copper wire. Paint: Shop, none; Field, contact surfaces of bolted field connections one coat red lead and surfaces inaccessible after erection three coats of red lead. No other paint to be applied by contractor. Red lead required shall be furnished by the contractor. See Special Provisions. See Special Provisions in regard to permissible beam substitutions and basis of payment.

Rivets 3/4", holes 1 1/8", except in handrail where rivets shall be 5/8", holes 1 1/4". Field connections for handrail channels shall be 5/8" button head bolts and for connection of rail to rail posts shall be 5/8" bolts, holes 1 1/4". All other field connections riveted, except as noted.

Bar supports and spacers will be required for reinforcing steel in superstructure. See Standard Specifications and Special Provisions. Design Specifications A.A.S.H.O. Loading 110 A.A.S.H.O. - One Lane Structural Steel Stress 16,000 psi Reinforcing Steel Stress 16,000 psi Concrete Class "B" 650 psi Concrete Class "X" 750 psi

B.M. #6 Elev. 778.41 Nail in Root 12" W. O. 50' L. Sta. 53+75.

BRIDGE OVER LOGAN CREEK

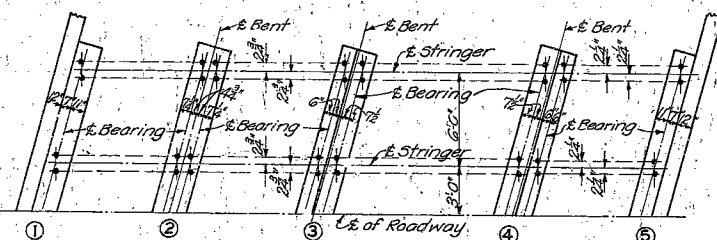
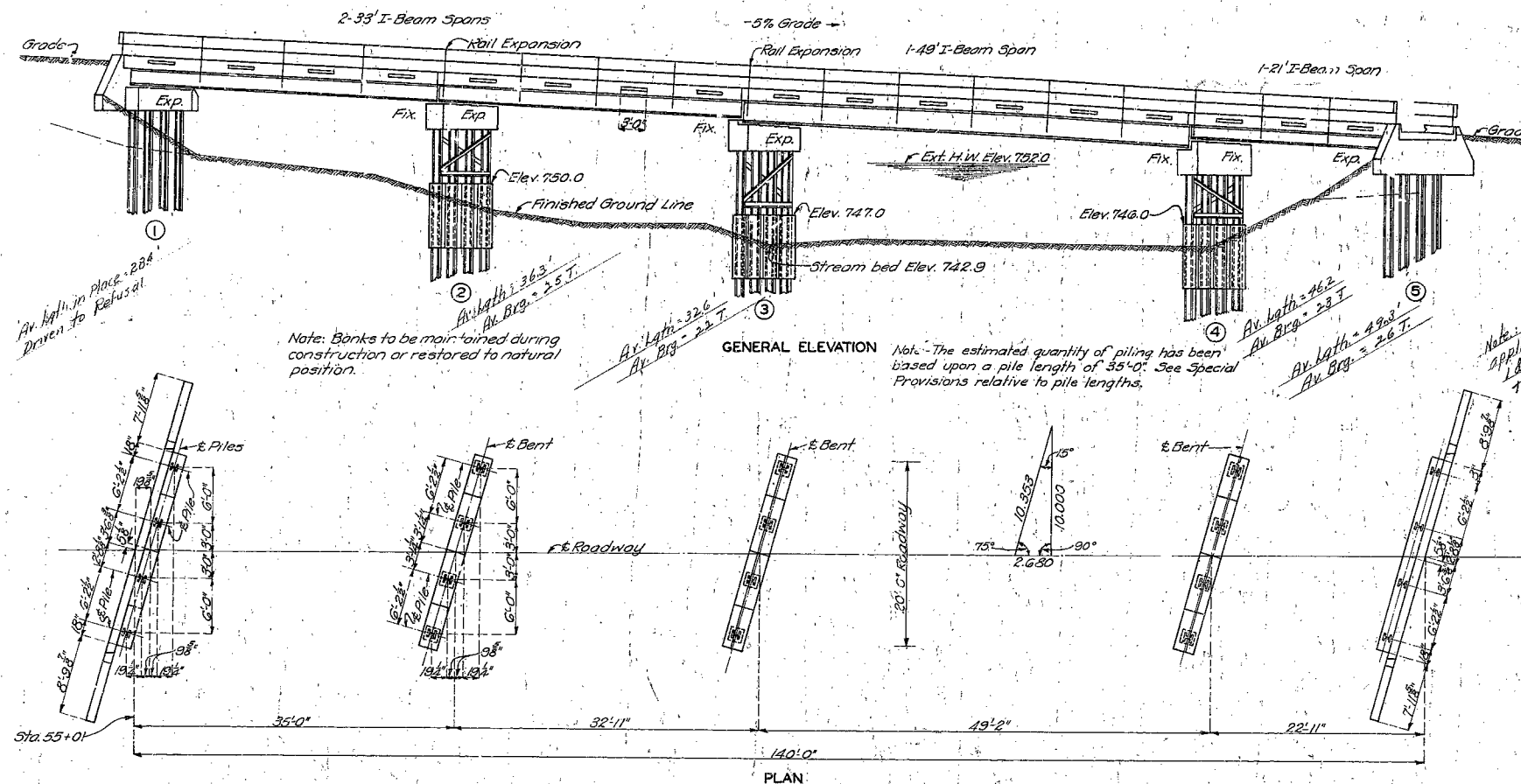
STATE ROAD FROM ROUTE SC NORTHWEST
ABOUT 5.75 MILES S.W. OF ELLINGTON
PROJECT NO. PWA 76, 3B-54A STA. 55+01

REYNOLDS COUNTY

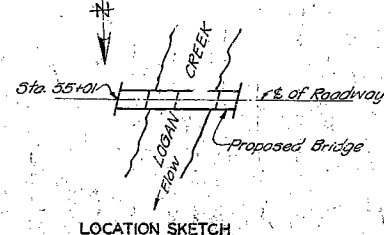
SUBMITTED BY: *T.H. Cutler* DATE: 10/1/34
APPROVED BY: *T.H. Cutler* DATE: 10/5/34
CHIEF ENGINEER

STD. C10R

S-851



HALF ANCHOR BOLT PLAN



LOCATION SKETCH

Note: Dimensions given are along centerline of bars and are for computed lengths. Reinforcing bars 3/4" or over in diameter which are bent to an angle greater than 90° shall be of structural grade.

BILL OF REINFORCING STEEL FOR SUBSTRUCTURE

No.	Size	Length	Mark	Location
End Bents No. 1 & 5				
12	3/4"	11'-9"	H1	Wing
8	3/4"	20'-9"	H2	"
2	3/4"	22'-3"	H3	Backwall
14	3/4"	23'-3"	H4	Beam
4	3/4"	21'-3"	H5	"
6	3/4"	7'-6"	V1-V2	Wing Bt #1
23	3/4"	3'-0"	V3	Backwall Bt #1
1	3/4"	5'-9"	V4	Wing Bt #1
7	3/4"	5'-6"	V5	" "
5	3/4"	6'-6"	V6-V7	" "
1	3/4"	5'-0"	V8	" "
1	3/4"	5'-3"	V9	" "
84	3/4"	6'-9"	U1	Beam
4	3/4"	22'-9"	T1	Backwall
2	3/4"	13'-0"	T2	Wing Bt #1
2	3/4"	12'-9"	T3	" "
2	3/4"	11'-6"	T4	" "
2	3/4"	11'-9"	T5	" "
23	3/4"	3'-0"	V10	Backwall
Inf. Bents No. 2, 3 & 4				
24	3/4"	23'-3"	H4	Beam
6	3/4"	21'-3"	H5	"
42	3/4"	5'-9"	U2	"
84	3/4"	6'-3"	U3	"

BENDING SKETCHES & CUTTING DIAGRAMS

End Bents No. 1 & 5

6-V1-V2 CUT 6 BARS

6-V8-V7 CUT 5 BARS

Inf. Bents No. 2, 3 & 4

T2-T3-T4-T5

U1-U2-U3

ESTIMATED QUANTITIES				FINAL QUAN.
ITEM	SUPERSTR.	SUBSTR.	TOTAL	
Excavation Class 1 Cu. Yds.		10	10	8
Excavation Class 2 Cu. Yds.		33	33	3.5
Concrete Class "B" Cu. Yds.		327	327	39.7
Concrete Class "X" Cu. Yds.		69.4	69.4	69.4
Fabricated Structural Steel Lbs.	58500		58500	5766.0
Reinforcing Steel Lbs.	17630	3570	21200	2120.0
10" C.B. Piling (In place) Lbs.		34300	34300	3777.0
Fabricated Struct. Steel (Substr.) Lbs.		4500	4500	474.0

Note: Bridge excavation above Elev. 745.0 will be paid for as Class 1 Bridge Excavation. Bridge excavation below Elev. 745.0 will be paid for as Class 2 Bridge Excavation. *Beth. #10 @ 49" may be substituted for the 10" C.B. @ 49" specified for pile and pile caps. See Special Provisions for basis of payment. *Fabricated structural steel (superstructure) includes channel and angle bracing and pile caps but not 10" C.B. Piling or pile splice materials. *Weight of reinforcing steel includes weight of wire mesh. See Special Provisions.

Note: This drawing is not to scale. Follow dimensions.

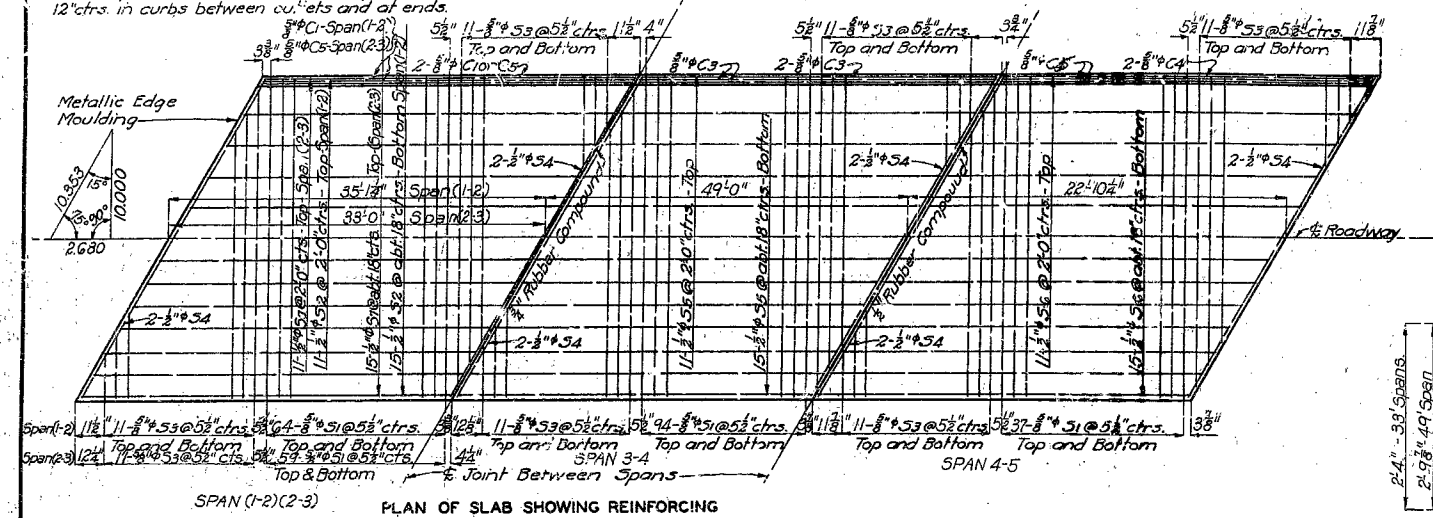
Sheet No. 1 of 3.

Drawn Aug. 1933 By R.J.G.
Traced Aug. 1933 By R.J.G.
Checked Aug. 1933 By N.W.R.
Assembled Jan. 1934 By J.G.-G.W.
Checked Feb. 1934 By J.G.-G.W.

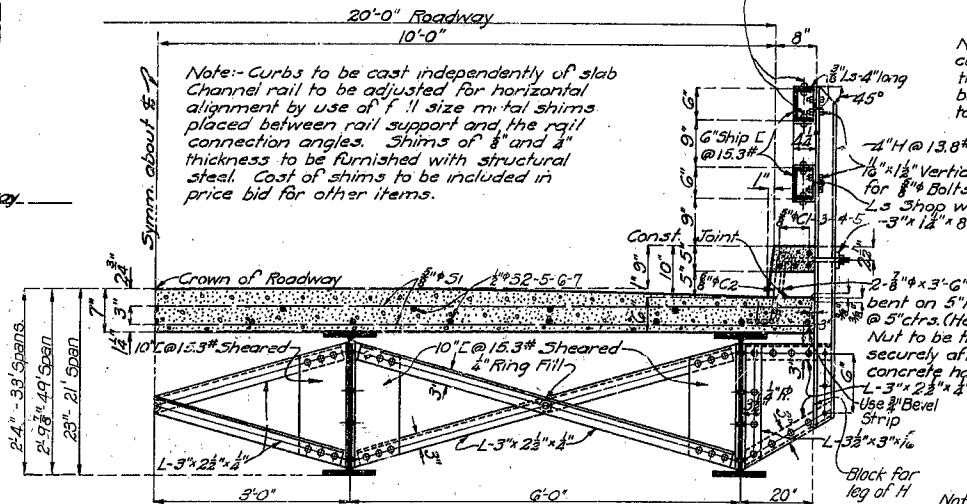
MISSOURI STATE HIGHWAY DEPARTMENT

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.	19-34A	19	2	3

Note: Space dowel bars "C2" at approximately 12" ctrs. in curbs between outlets and at ends.



PLAN OF SLAB SHOWING REINFORCING

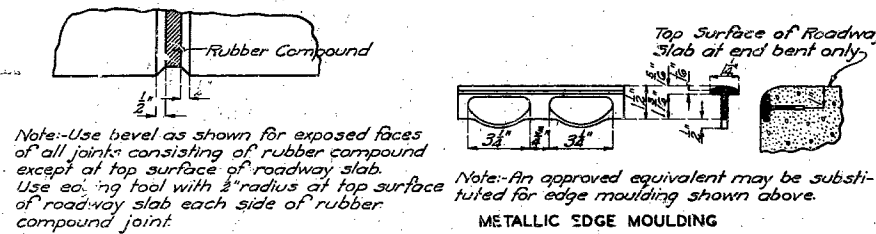


HALF SECTION THRU SPAN

Note: Depth of outside stringers will in some cases be a fraction of an inch less than that of inside stringers and in order to keep bottom of slab horizontal it will be necessary to haunch slab down to top of outside stringers.

Note: Top of channel separators at ends of each I-beam span to be flush with bottom of floor slab.

DETAIL OF RAIL BRACKETS AT ENDS OF SPAN

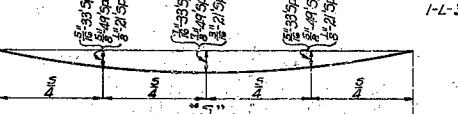


DETAIL OF BEVEL FOR RUBBER COMPOUND JOINTS

Note: Use bevel as shown for exposed faces of all joints consisting of rubber compound except at top surface of roadway slab. Use ed. ing tool with 1/2" radius at top surface of roadway slab each side of rubber compound joint.

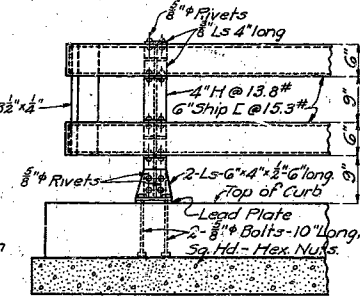
METALLIC EDGE Moulding

Note: Top of curbs under end posts shall be finished to a smooth surface parallel to grade. Not less than one nor more than four soft lead plates of 1/8" thickness shall be used under angles of each end rail post for aligning rail to correct elevation. Plates shall be 8" x 6" and shall be punched 8" or same gauge as the angles. No grouting permitted. Cost of lead plates to be included in price bid for other items.

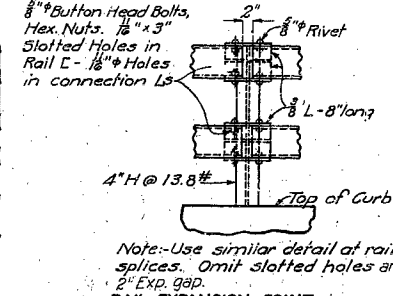


Note: Floor slab to be brought to grade and dead load deflection taken care of by increasing slab thickness. Depth of slab at outside face of curb to be kept uniform and bottom surface of slab warped between curb and outside beam to obtain required thickness at beam. Payment will be allowed for additional concrete required for thickening slab. This additional concrete is included in "Estimated Quantities."

DEFLECTION DIAGRAM

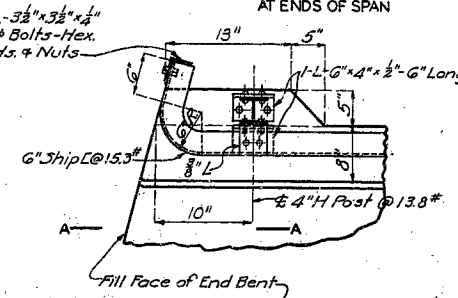


SECTION A-A

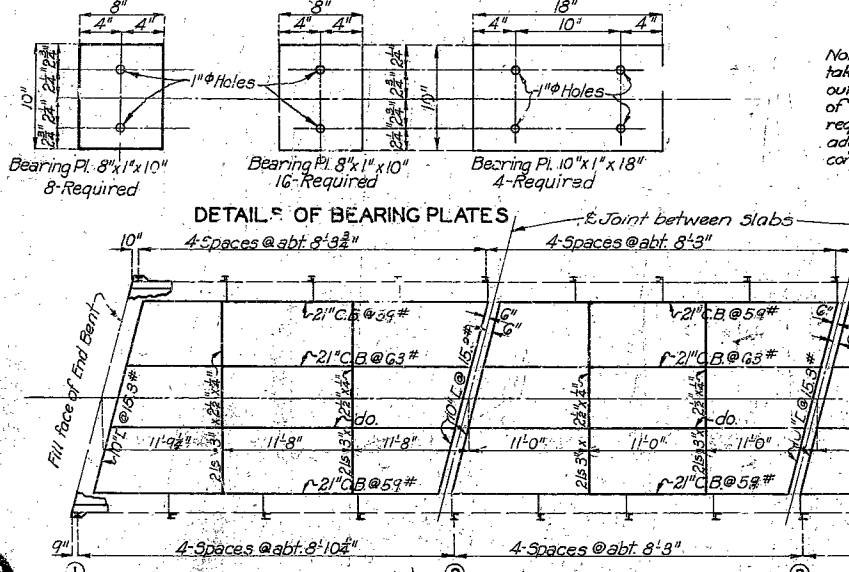


Note: Use similar detail at rail apices. Omit slotted holes and 2" Exp. gap.

RAIL EXPANSION JOINT

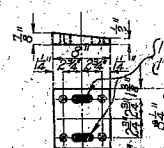


LOCATION OF POSTS AT END BENTS



PLAN OF STRUCTURAL STEEL LAYOUT

PERMISSIBLE BEAM SUBSTITUTIONS	BETH BEAMS		STANDARD I.B.M.S.	
	Inside	Outside	Inside	Outside
33' Span	21" @ 59#	21" @ 63#	20" @ 75#	20" @ 70#
49' Span	27" @ 91#	27" @ 91#	24" @ 115#	24" @ 105#
21' Span	16" @ 41#	16" @ 40#	15" @ 50#	15" @ 45#



DETAILS OF BEARINGS & BEVEL PLATES

BRIDGE OVER LOGAN CREEK

STATE ROAD FROM ROUTE SC NORTHWEST

ABOUT 5.75 MILES SW. OF ELLINGTON

PROJECT NO. PWA76, SB-54A STA. 53+01

REYNOLDS COUNTY

FINISHED

Sheet No. 2 of 3

S-851

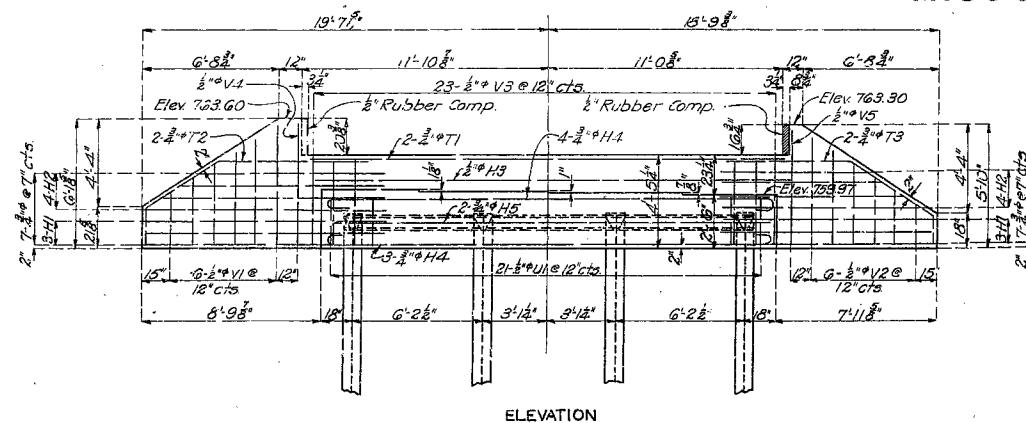
455

Drawn Aug. 1933 by C.F.F. Assembled Jan. 1934 by J.G.H.W.H.
Traced Aug. 1933 by C.F.F. Checked Feb. 1934 by J.F.L.
Checked Aug. 1933 by N.Y.R.

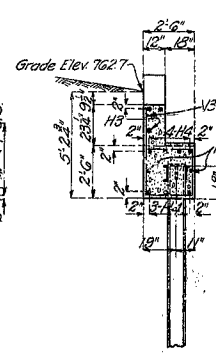
Note: This drawing is not to scale. Follow dimensions.

MISSOURI STATE HIGHWAY DEPARTMENT

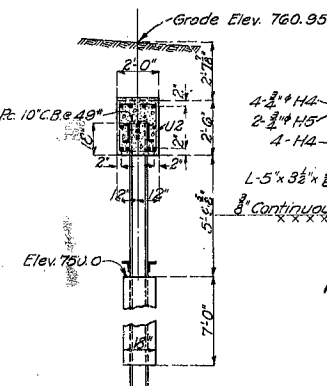
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.	PWA76, SB-54A	19		
Docket # 22116					



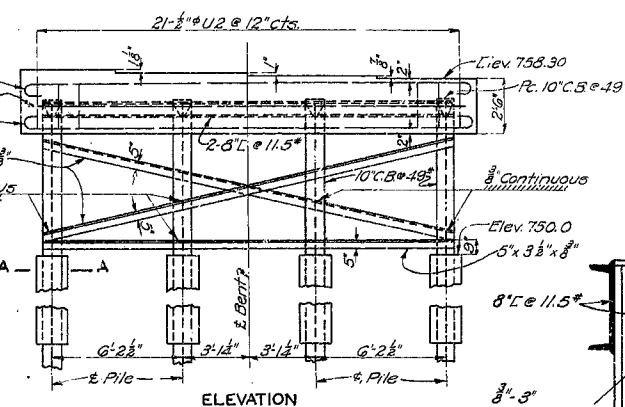
ELEVATION



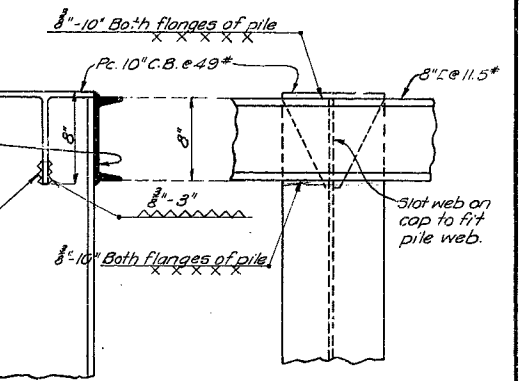
SECTION AT 4



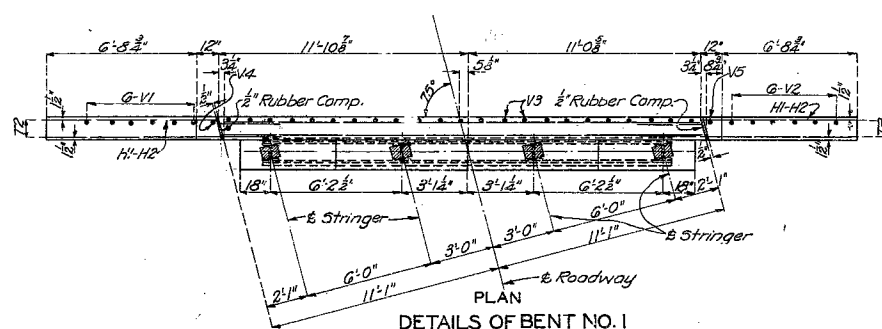
SECTION AT 6



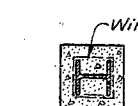
ELEVATION



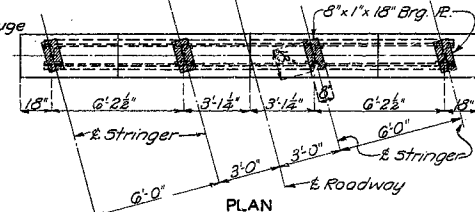
DETAILS OF TOPS OF PILE



PLAN

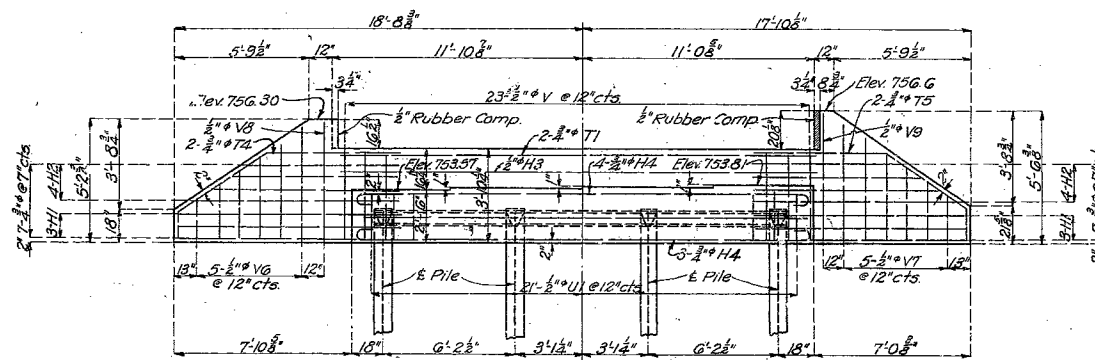


SECTION A-A

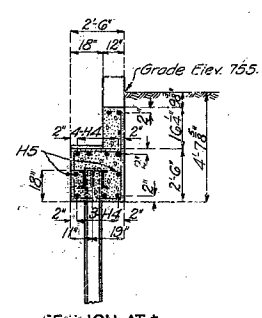


PLAN

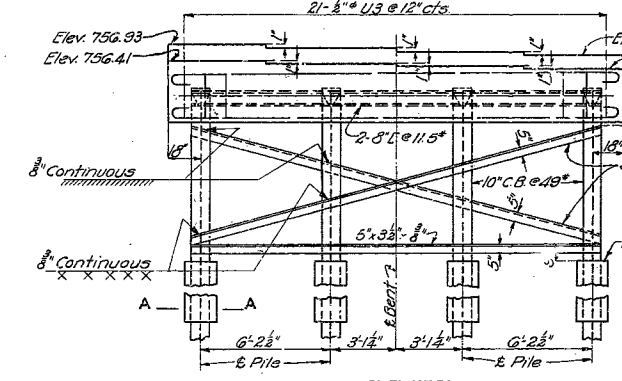
DETAILS OF INT. BENT NO. 2



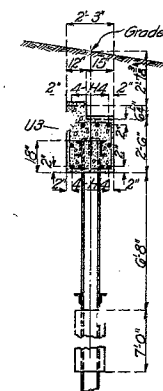
ELEVATION



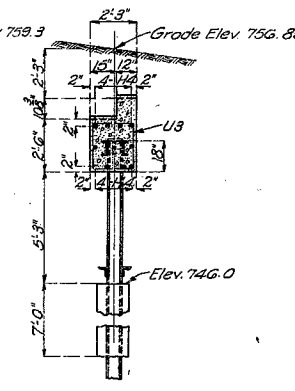
SECTION AT 6



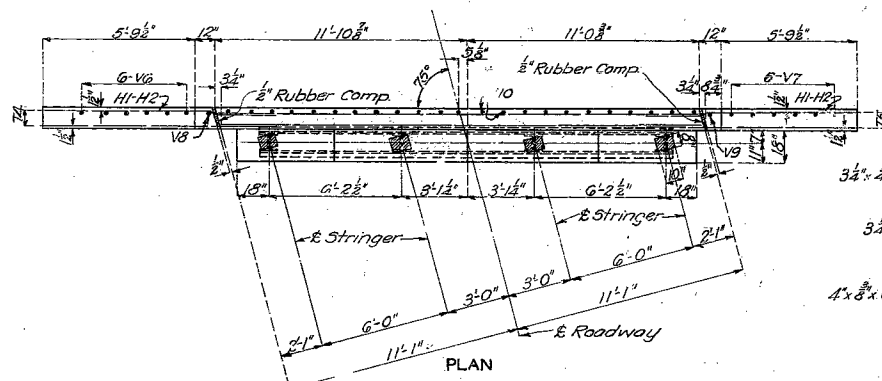
ELEVATION



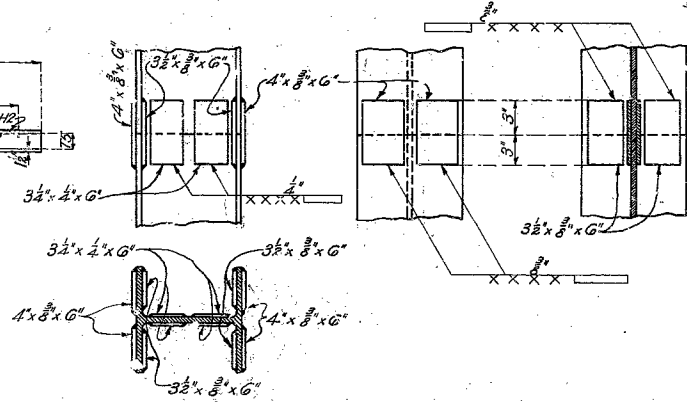
SECTION AT 6



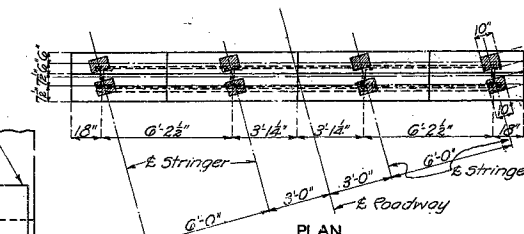
SECTION AT 6



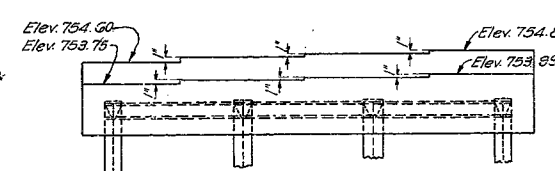
PLAN



DETAILS OF SPLICES



DETAILS OF INT. BENT NO. 3



PART ELEVATION BENT NO. 4
Details not shown are same as for Bent No. 3.

BRIDGE OVER LOGAN CREEK

STATE ROAD FROM ROUTE SC NORTHWEST

ABOUT 5.7 MILES SW. OF ELLINGTON

PROJECT NO. PWA76, SB-54A STA. 55+01

REYNOLDS COUNTY

S-851

Sheet No. 3 of 3.

Drawn Jan. 1934 by J.G.
Traced Jan. 1934 by G.W.
Checked Feb. 1934 by R.N.

456

MISSOURI HIGHWAY AND TRANSPORTATION COMMISSION

STATE	PROJ. NO.	SHEET NO.
MO.	J950342	4
SEC/SUR 5	TW 29N	RGE 10

General Notes:

Design Specifications:

A.A.S.H.T.O. 1992

Design Loading:

1993 Missouri Posting Loads. (H20 & 3S2)

No Future Wearing Surface

Design Unit Stresses:

Structural Carbon Steel fy=36,000 psi. (New Steel)

Existing Steel fy=30,000 psi.

Working stress Design based on 68% fy. (Existing)

Paint:

Calcium Sulfonate (2 coats)(See Special Provisions).

Old and New Work:

Outline of old work is indicated by light dashed lines.
Heavy lines indicate new work.

Dimensions:

Longitudinal dimensions are based on the original design plans.

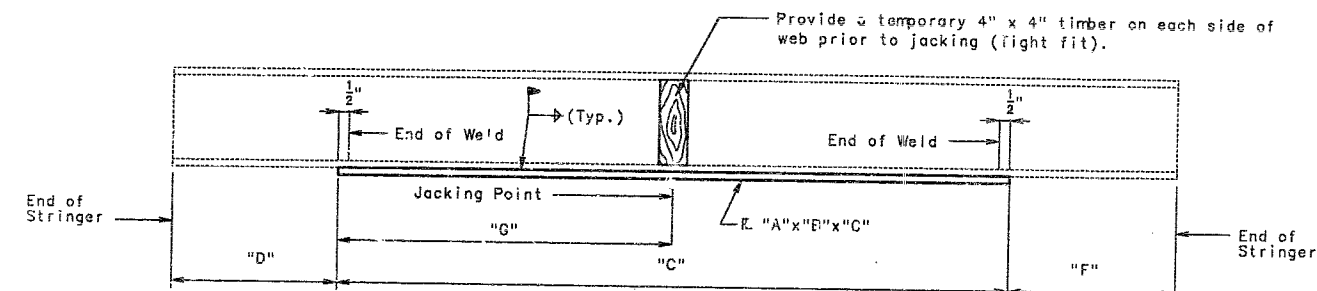
Traffic:

Maintain one lane of traffic during construction, (See Roadway Traffic Control Plans).

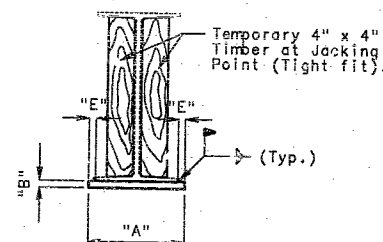
Stringer Support:

All existing stringers in the span being strengthened shall be raised simultaneously * at jacking point and supported during welding of new steel plates.

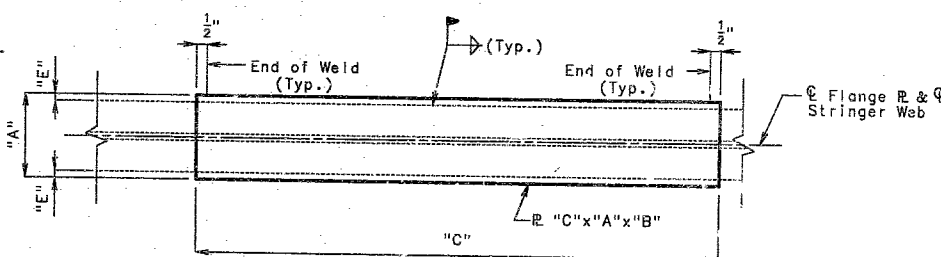
The temporary supports must be capable of safely supporting a service load of approximately ** tons per stringer. (Factor of safety not included) (See Special Provisions).



TYPICAL ELEVATION OF STRINGER
SPAN (1-2) THRU (4-5)



SECTION THRU STRINGER



DETAIL OF FLANGE R

TABLE OF DIMENSIONS

TABLE OF DIMENSIONS										
Stringer Location		Dimensions								
		"A"	"B"	"C"	"D"	"E"	"F"	"G"	*	**
Exterior	Span (1-2)	10"	1"	16'-6"	8'-7"	$\frac{7}{8}$ "	8'-7"	8'-3"	$\frac{5}{16}$ "	23.0
Interior	Span (1-2)	10"	1"	16'-6"	8'-7"	$\frac{7}{8}$ "	8'-7"	8'-3"	$\frac{3}{8}$ "	25.0
Exterior	Span (2-3)	10"	1"	16'-6"	8'-2"	$\frac{7}{8}$ "	8'-2"	8'-3"	$\frac{5}{16}$ "	23.0
Interior	Span (2-3)	10"	1"	16'-6"	8'-2"	$\frac{7}{8}$ "	8'-2"	3'-3"	$\frac{1}{4}$ "	25.0
Exterior	Span (3-4)	12"	1"	20'-0"	14'-5"	1"	14'-5"	10'-0"	$\frac{5}{8}$ "	31.0
Interior	Span (3-4)	12"	1"	20'-0"	14'-5"	1"	14'-5"	10'-0"	$\frac{7}{8}$ "	35.0
Exterior	Span (4-5)	9"	1"	12'-3"	4'-8"	1"	4'-8"	6'-1 $\frac{1}{2}$ "	$\frac{1}{8}$ "	15.0
Interior	Span (4-5)	9"	1"	12'-3"	4'-8"	1"	4'-8"	6'-1 $\frac{1}{2}$ "	$\frac{3}{16}$ "	19.0

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

ESTIMATED QUANTITIES		
ITEM	Lump Sum	TOTAL
Strengthening Existing Stringers		1

REPAIRS TO BRIDGE OVER LOGAN CREEK

STATE ROAD FROM RTE. 72 S. TO RTE. 106

ABOUT 1.1 MILES N.W. OF RTE. 106

PROJECT NO. J950342 STA. 55+01.00

JOB NO. J950342

RTE. B

REYNOLDS

COUNTY

STD.

STD.

S08511

SHEET NO. 1 OF 1

DATE 3/10/94

WID 5, FLA, 1, A
FLANGE BRACE
AUG. 1993
NOV. 1993

DESIGNED: JAN. 1994
DETAILED: JAN. 1994
CHECKED: JAN. 1994